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# Short on Practice Targets, the Navy Is Hot-Rodding Its Old Drones

A drone that dates back to nearly WWII gets a modern upgrade so it can simulate today's weapons and defense tech.

By Eric Tegler Jan 13, 2016

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U.S. Navy / NAWCWD

The U.S. Navy is running out of practice targets. To solve the problem, it's digging up target drones the service has been using since 1948 and giving them a modern upgrade so they can simulate what sailors face in 2016.

Back when the Navy started flying the 'Firebee' jet-powered target drone, it simulated threats to ships and shore installations from fighter and bomber aircraft. By the late 1950s the Ryan Q-2C Firebee was flying higher and faster, simulating tactical missiles. Over the course of the decades to come, the Navy would keep flying the Firebee, updated through several versions.

**"WE TOOK AN ESSENTIALLY USELESS TARGET AND**

**TURNED IT INTO THE MOST ADVANCED IN THE**

**INVENTORY."**

One of the most numerous, the BQM-34, was used from the 1960s through the 1990s. It weighs about 2,500 pounds and can fly as fast 690 mph at altitudes up to 60,000 feet. It carried all sorts of threat simulators, from electronic countermeasures gear to radar augmenters and infrared flares. But by the 1990s, its guidance system was dated and it couldn't maneuver reliably below 40 feet of

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altitude.

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That Low-level capability is important because modern anti-ship missiles fly very low above the water to evade radar detection and interception, and to strike ships just above the waterline. Because the BQM-34 couldn't reliably simulate such a profile, and because its autopilot no longer worked with the latest command and control systems, it was replaced by a newer, smaller Firebee, the BQM-74, in the 1990s. At the time, dozens of the older Firebees were mothballed at Point Mugu Air Station west of Los Angeles, home to the Naval Air Warfare Center Weapons Division (NAWCWD).

"We are running out of BQM-74s, our workhorse target, and its replacement isn't ready yet," says David Whitson, BQM-74/BQM-34 technical project officer at NAWCWD. The next generation drone, the BQM-177A, won't arrive until 2018.

Time to dig up the old standby.



U.S. Navy / NAWCWD

As far back as 2005, the Navy anticipated the shortfall and asked Northrop Grumman to upgrade several BQM-34s. But with a gap still on the horizon, Dave Whitson's team at NAWCWD wanted to learn to do the conversions in-house, upgrading the avionics in the old BQM-34 models to systems more akin to the BQM-74. "We wanted to bring the knowledge in-house so that, in the future, we can upgrade more of these targets without having to go back to the contractor," Whitson says.

Whitson's technicians worked with Northrop to upgrade three BQM-34s with new autopilot and navigation systems, essentially bringing them up to BQM-74 capability. They then converted the remaining 17 drones in-house, purchasing the required avionics from Northrop but modifying the UAVs without contractor assistance. The process saved the taxpayer nearly \$75,000 per unit., Whitson says, and gave his team members valuable technical experience. Regaining native expertise contracted out to civilians over the last two decades is a new trend in the U.S. military, because important both in cost and capability terms.

The addition of a new avionics gives the older Firebee more maneuverability and with a bigger payload capacity than the BQM-74, more simulation capabilities, making it a pretty useful hot rod. BQM-34s are already back use and in demand and the Navy has an additional 27 in storage, ready to be hopped-up as needed. "And now that we have the framework, we can do it again," Whitson adds.

How well do the hot-rodged Firebees work? "The [old] model was iffy below 40 feet," Whitson acknowledges. "Now we're comfortable going down to 10, which is a requirement for anti-ship cruise missile type events. We took an essentially useless target and turned it into the most advanced BQM-34 in the inventory."

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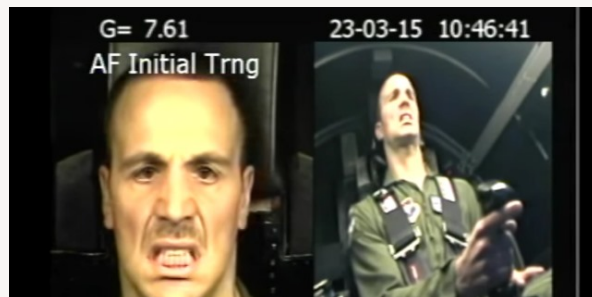


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